

ABSTRACT OF THE DISCLOSURE

A polymeric coating composition chemically grafts to cellulose or synthetics, and the resulting product serves as a filter in a filtration system which keeps the filtered liquid or gas clean by removing soot, solids, liquids and other contaminants, thus maximizing the life of equipment or engines. The coating is developed using chemical grafting that involves the use of monomers, prepolymers, catalysts, a graft initiator system and/or other ingredients. The resulting coating is used to treat cotton, other cellulose materials, synthetic materials and combinations thereof, and provides for graft-polymerization, thereby forming a polymeric film which is chemically bonded to the cotton fiber, other cellulose fibers, synthetics or combinations thereof with excellent adhesion, thereby imparting all the desired properties to the fiber in terms of increased filtration efficiency.